

Remarks

Claims 22-39 are pending in the subject application. By this Amendment, Applicants have amended claim 22. Support for the amendments can be found throughout the subject specification and in the claims as originally filed. Entry and consideration of the amendments presented herein is respectfully requested. Accordingly, claims 22-39 are currently before the Examiner and read on the elected invention. Favorable consideration of the pending claims is respectfully requested.

Claim 22 is objected because the acronym “IL-18BP” is used without first defining what it represents. By this Amendment, Applicants have replaced the acronym “IL-18BP” with “interleukin-18 binding protein” and then placed the acronym in parenthesis. Accordingly, reconsideration and withdrawal of the objection is respectfully requested.

Claims 22-39 are rejected under 35 U.S.C. § 103(a) as obvious over Novick *et al.* (WO 99/09063, 1999) in view of Shibuya *et al.* (U.S. Patent No. 6,406,909) and Ciccarone *et al.* (WO 02/077202, 2002). The Office Action indicates that Novick *et al.* teach production of recombinant IL-18BP in serum-free culture medium and teach use of CHO cells for production but do not teach any components of the serum-free medium. The Office Action states that Shibuya *et al.* teach components of a serum-free medium including asparagine at 32.5 mg/L, sodium selenite at 0.0043 mg/L, and wheat protein hydrolysate at 1g/L. The Office Action cites Ciccarone *et al.* for teaching additional medium components and for teaching a medium that lacks glutamine. The Office Action states that “where the general conditions of a claim are disclosed by the prior art, it is not inventive to discover the optimum or workable ranges by routine experimentation.” *In re Aller*, 220 F.2d 454, 456 (CCPA 1955). Applicants respectfully traverse.

Applicants respectfully assert that a *prima facie* case of obviousness has not been established. In order to assert that concentrations of asparagine, sodium chloride, selenite, wheat hydrolysate, insulin, and the like are result-effective parameters that can be optimized by routine experimentation, it is required first that such concentrations are recognized in the prior art as result-effective variables. See MPEP 2144.05. Moreover, even if the prior art recognizes a variable as result-effective over a certain range, it may be that the prior art does not recognize the variable as result-effective over all ranges. In the *Aller* case cited in the Office Action, for example, the court recognizes that temperature and acid concentration in general are variables that a chemist might optimize. However,

the court goes out of its way to establish that at least one *claimed* combination of temperature and acid concentration would have been an attractive target to try (*see Aller* at 457-58 (bridging paragraph) (arguing that a skilled chemist would have expected a possible increase in reaction rate over the prior art of record for the claimed combination of 80 °C and 70% sulfuric acid). In other words, the court makes a point of establishing that there was an art-supported rationale for testing the claimed reaction conditions.

Applicants further note that the Court of Customs and Patent Appeals held that the optimization of a parameter that is not recognized to be a result effective variable is an exception to the rule that it is a matter of obviousness for the skilled artisan to determine an optimum value within a disclosed range (*see In re Antonie*, 559 F.2d 618, 620 (C.C.P.A. 1977)) and respectfully assert that the Office Action does not establish that the concentrations of each of asparagine, sodium chloride, selenite, wheat hydrolysate and insulin are art-recognized result effective variables. Applicants further submit that even if such elements of the growth media were established to be recognized as result effective, it has not been shown that each concentration of the claimed media components was recognized as result-effective within the ranges disclosed within the cited prior art. The Board of Patent Appeals and the predecessor of the Court of Appeals for the Federal Circuit (the Court of Customs and Patent Appeals) have held that while it may generally be a matter of obviousness for the skilled artisan to determine the optimum value within a disclosed range, *In re Boesch*, 617 F.2d 272, 276 (C.C.P.A. 1980), it would not have been obvious for one of ordinary skill in the art to find an optimum value that is far outside the range taught by the prior art. *See In re Sebek*, 465 F.2d 904, 907 (C.C.P.A. 1972). *See also, e.g., Ex parte Atkinson*, Appeal 2007-3900 (“optimization of a known result-effective variable in a given range is generally obvious only when it is reasonably expected that an improvement will arise in that range”) (reversing Examiner’s optimization-based obviousness rejection; internal citation omitted).

In this regard, Applicants respectfully submit that the amounts of asparagine, selenite and/or wheat hydrolysate recited in the claims are present in amounts that exceed any of the amounts taught in Shibuya *et al.* and Ciccarone *et al.* (see Table presented below). Additionally, the amount of sodium chloride recited in the claims is higher than that taught in Shibuya *et al.* and there is no basis

for substituting the amount disclosed in Ciccarone *et al.* for that taught in Shibuya *et al.* absent the teachings of the instant application and the claims under examination.

Component	Claims	Shibuya <i>et al.</i>	Ciccarone <i>et al.</i>
Asparagine	about 800 to about 900 mg/L	32.5-65 mg/L	5-50 mg/L
Wheat Hydrolysate	about 5000 to about 15000 mg/L	500 to about 3000 mg/L	None
Selenite	about 5 to about 15 micrograms/L	4.3 micrograms sodium selenite/L	0.0001 to 0.03 micrograms/L
Insulin	about 2.5 to about 6 mg/L	5 mg/L	10 g/L (if present)
Sodium chloride	about 3000 to about 4500 mg/L	1025 mg/L	600-16000 mg/L

Thus, under the holding of *In re Sebek*, Applicants respectfully submit that it would not have been obvious for one of ordinary skill in the art to choose component amounts that are far outside the ranges taught by the prior art, and reconsideration and withdrawal of the rejection of record is respectfully requested.

Applicants also note the argument made in the Office Action regarding the teaching of Ciccarone *et al.* with respect to a teaching of a serum free medium that lacks glutamine; however, the medium of Shibuya *et al.* teaches that this component is present in the media disclosed therein and no basis for deleting this component is provided in the Office Action. As noted by the Board of Patent Appeals in *Ex Parte Joachim Burger*, Appeal 2007-2308 (decided July 12, 2007),

Despite the Examiner's unsupported assertion that person of ordinary skill in the art would have found it obvious to add an additional counterirritant to Burger's composition, we find nothing in the combination of references relied upon to suggest the use of more than one counterirritant. Instead, we find that one reading Burger and Bell in combination would recognize that Burger's composition already includes the counterirritant vitamin A and therefore would not have been motivated to add a second counterirritant to Burger's composition. As set forth in *KSR Int'l Co. v. Teleflex Inc.*, 127 S.Ct. 1727, 1741, 82 U.S.P.Q.2d 1385, 1396 (2007), a patent composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the prior art. Although common sense directs one to look with care at a patent application that claims as innovation the combination of two known devices according to their established functions, it can be important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does.

Thus, Applicants respectfully submit that there is no articulated reason in the Office Action to omit

glutamine from the media taught by Shibuya *et al.* Applicants also submit that just as one skilled in the art may be motivated to make variations of a known work in order to “gain the commonly understood benefits of such adaptation, such as decreased size, increased reliability, simplified operation, and *reduced cost*” (see KSR Guidelines, section III, example 2 (emphasis added)), it may likewise be said that one skilled in the art would be discouraged from making adaptations that within the teachings of the art would only be expected to *increase cost* without any associated benefit (for example, increasing asparagine concentration far beyond the amount necessary to supply a nutrient).

Applicants further respectfully assert that the combination of Novick *et al.* with Shibuya *et al.* and Ciccarone *et al.* would result in a media containing glutamine as there does not appear to be any indication in the Office Action that Shibuya *et al.* contemplate such a media (lacking glutamine). As the Patent Office is aware, all the claim limitations must be taught or suggested by the prior art in order to establish the *prima facie* obviousness of a claimed invention (*CFMT, Inc. v. Yieldup Intern. Corp.*, 349 F.3d 1333, 1342 (Fed. Cir. 2003) citing *In re Royka*, 490 F.2d 981, 985 (C.C.P.A. 1974)). Thus, it is respectfully submitted that a *prima facie* case of obviousness has not been established for claim 28 (reciting media that does not contain glutamine).

Applicants further submit that the current rejection is based upon improper hindsight reconstruction of the claimed invention. While Applicant recognizes that such a reconstruction of the invention is proper so long as an obviousness rejection takes into account only the knowledge which was within the level of ordinary skill in the art at the time the claimed invention was made and does not include knowledge gleaned only from applicant's disclosure (*In re McLaughlin*, 443 F.2d 1392, 1395, 170 U.S.P.Q. 209, 212 (C.C.P.A. 1971)), it is respectfully submitted that Applicants' disclosure has been used to serve as the basis of the rejection currently of record. Combining prior art references without evidence of a suggestion, teaching, or motivation simply takes the inventor's disclosure as a blueprint for piecing together the prior art to defeat patentability--the essence of hindsight. *Interconnect Planning Corp. v. Feil*, 774 F.2d 1132, 1138, 227 U.S.P.Q. 543, 547 (Fed. Cir. 1985) (“The invention must be viewed not with the blueprint drawn by the inventor, but in the state of the art that existed at the time.”). In the case of the presently claimed invention, it is respectfully submitted that the Office Action has rejected the claims over a combination of references without providing any rationale as to why one skilled in the art would have modified the

teachings of Shibuya *et al.* with those of Ciccarone *et al.* to arrive at the media recited in the presently claimed invention and reconsideration and withdrawal of the rejection is respectfully requested.

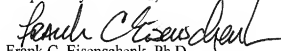
It should be understood that the amendments presented herein have been made solely to expedite prosecution of the subject application to completion and should not be construed as an indication of Applicants' agreement with or acquiescence in the Examiner's position. Applicants expressly reserve the right to pursue the invention(s) disclosed in the subject application, including any subject matter canceled or not pursued during prosecution of the subject application, in a related application.

In view of the foregoing remarks and amendments to the claims, Applicants believe that the currently pending claims are in condition for allowance, and such action is respectfully requested.

The Commissioner is hereby authorized to charge any fees under 37 CFR §§1.16 or 1.17 as required by this paper to Deposit Account No. 19-0065.

Applicants invite the Examiner to call the undersigned if clarification is needed on any of this response, or if the Examiner believes a telephonic interview would expedite the prosecution of the subject application to completion.

Respectfully submitted,



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